

#2 OIPE

RAW SEQUENCE LISTING

DATE: 08/13/2001

PATENT APPLICATION: US/09/921,992

TIME: 11:00:51

Input Set : A:\16516-107 seq listing.txt

Output Set: N:\CRF3\08132001\I921992.raw

ENTERED

1 <110> APPLICANT: Boronat, Albert;
 2 Campos, Narciso;
 3 Rodriguez-Concepcion, Manuel;
 4 Rohmer, Michel;
 5 Seeman, Myriam;
 6 Valentin, Henry E.;
 7 Venkatesh, Tyamagondlu V.;
 8 Venkatramesh, Mylavarapu

10 <120> TITLE OF INVENTION: Methyl-D-Erythritol Phosphate Pathway Genes
 12 <130> FILE REFERENCE: 16516.107/35-21(51897)US

C--> 14 <140> CURRENT APPLICATION NUMBER: US/09/921,992
 C--> 14 <141> CURRENT FILING DATE: 2001-08-06

14 <150> PRIOR APPLICATION NUMBER: US 60/223,483
 15 <151> PRIOR FILING DATE: 2000-08-07
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 22 <213> ORGANISM: Arabidopsis thaliana
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 25 <221> NAME/KEY: CDS
 26 <222> LOCATION: (154)..(2376)
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 34 ctcgtcttca gttactttga ttactgaga aaa atg gcg act gga gta ttg cca 174
 35 Met Ala Thr Gly Val Leu Pro
 36 1 5

38 gct ccg gtt tct ggg atc aag ata ccg gat tcg aaa gtc ggg ttt ggt 222
 39 Ala Pro Val Ser Gly Ile Lys Ile Pro Asp Ser Lys Val Gly Phe Gly
 40 10 15 20

42 aaa agc atg aat ctt gtg aga att tgt gat gtt agg agt cta aga tct 270
 43 Lys Ser Met Asn Leu Val Arg Ile Cys Asp Val Arg Ser Leu Arg Ser
 44 25 30 35

46 gct agg aga aga gtt tcg gtt atc cgg aat tca aac caa ggc tct gat 318
 47 Ala Arg Arg Arg Val Ser Val Ile Arg Asn Ser Asn Gln Gly Ser Asp
 48 40 45 50 55

50 tta gct gag ctt caa cct gca tcc gaa gga agc cct ctc tta gtg cca 366
 51 Leu Ala Glu Leu Gln Pro Ala Ser Glu Gly Ser Pro Leu Leu Val Pro
 52 60 65 70

54 aga cag aaa tat tgt gaa tca ttg cat aag acg gtg aga agg aag act 414
 55 Arg Gln Lys Tyr Cys Glu Ser Leu His Lys Thr Val Arg Arg Lys Thr
 56 75 80 85

58 cgt act gtt atg gtt gga aat gtc gcc ctt gga agc gaa cat ccg ata 462
 59 Arg Thr Val Met Val Gly Asn Val Ala Leu Gly Ser Glu His Pro Ile
 60 90 95 100

62 agg att caa acg atg act act tcg gat aca aaa gat att act gga act 510

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67 Val Asp Glu Val Met Arg Ile Ala Asp Lys Gly Ala Asp Ile Val Arg
68 120                      125                      130                      135
70 ata act gtt caa ggg aag aaa gag gcg gat gcg tgc ttt gaa ata aaa      606
71 Ile Thr Val Gln Gly Lys Lys Glu Ala Asp Ala Cys Phe Glu Ile Lys
72                      140                      145                      150
74 gat aaa ctc gtt cag ctt aat tac aat ata ccg ctg gtt gca gat att      654
75 Asp Lys Leu Val Gln Leu Asn Tyr Asn Ile Pro Leu Val Ala Asp Ile
76                      155                      160                      165
78 cat ttt gcc cct act gta gcc tta cga gtc gct gaa tgc ttt gac aag      702
79 His Phe Ala Pro Thr Val Ala Leu Arg Val Ala Glu Cys Phe Asp Lys
80                      170                      175                      180
82 atc cgt gtc aac cca gga aat ttt gcg gac agg cgg gcc cag ttt gag      750
83 Ile Arg Val Asn Pro Gly Asn Phe Ala Asp Arg Arg Ala Gln Phe Glu
84                      185                      190                      195
86 acg ata gat tat aca gaa gat gaa tat cag aaa gaa ctc cag cat atc      798
87 Thr Ile Asp Tyr Thr Glu Asp Glu Tyr Gln Lys Glu Leu Gln His Ile
88 200                      205                      210                      215
90 gag cag gtc ttc act cct ttg gtt gag aaa tgc aaa aag tac ggg aga      846
91 Glu Gln Val Phe Thr Pro Leu Val Glu Lys Cys Lys Lys Tyr Gly Arg
92                      220                      225                      230
94 gca atg cgt att ggg aca aat cat gga agt ctt tct gac cgt atc atg      894
95 Ala Met Arg Ile Gly Thr Asn His Gly Ser Leu Ser Asp Arg Ile Met
96                      235                      240                      245
98 agc tat tac ggg gat tct ccc cga gga atg gtt gaa tct gcg ttt gag      942
99 Ser Tyr Tyr Gly Asp Ser Pro Arg Gly Met Val Glu Ser Ala Phe Glu
100                      250                      255                      260
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104                      265                      270                      275
106 atg aaa gcg agc aac cca gtg atc atg gtc cag gcg tac cgt tta ctt      1038
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108 280                      285                      290                      295
110 gtg gct gag atg tat gtt cat gga tgg gat tat cct ttg cat ttg gga      1086
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112                      300                      305                      310
114 gtt act gag gca gga gaa ggc gaa gat gga cgg atg aaa tct gcg att      1134
115 Val Thr Glu Ala Gly Glu Gly Glu Asp Gly Arg Met Lys Ser Ala Ile
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118 gga att ggg acg ctt ctt cag gac ggg ctc ggt gac aca ata aga gtt      1182
119 Gly Ile Gly Thr Leu Leu Gln Asp Gly Leu Gly Asp Thr Ile Arg Val
120                      330                      335                      340
122 tca ctg acg gag cca cca gaa gag gag ata gat ccc tgc agg cga ttg      1230
123 Ser Leu Thr Glu Pro Pro Glu Glu Glu Ile Asp Pro Cys Arg Arg Leu
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126 gct aac ctc ggg aca aaa gct gcc aaa ctt caa caa ggc gca ccg ttt      1278
127 Ala Asn Leu Gly Thr Lys Ala Ala Lys Leu Gln Gln Gly Ala Pro Phe

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Input Set : A:\16516-107 seq listing.txt

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132			380		385		390	
134	cta cct gta caa aaa gag gga gaa gag gtt gat tac aga aat gtc ctt	1374						
135	Leu Pro Val Gln Lys Glu Gly Glu Glu Val Asp Tyr Arg Asn Val Leu							
136			395		400		405	
138	cac cgt gat ggt tct gtt ctg atg tcg att tct ctg gat caa cta aag	1422						
139	His Arg Asp Gly Ser Val Leu Met Ser Ile Ser Leu Asp Gln Leu Lys							
140			410		415		420	
142	gca cct gaa ctc ctc tac aga tca ctc gct aca aag ctt gtc gtg ggt	1470						
143	Ala Pro Glu Leu Leu Tyr Arg Ser Leu Ala Thr Lys Leu Val Val Gly							
144			425		430		435	
146	atg cca ttc aag gat ctg gca act gtt gat tca atc tta tta aga gag	1518						
147	Met Pro Phe Lys Asp Leu Ala Thr Val Asp Ser Ile Leu Leu Arg Glu							
148	440		445		450		455	
150	cta ccg cct gta gat gat caa gtg gct cgt ttg gct cta aaa cgg ttg	1566						
151	Leu Pro Pro Val Asp Asp Gln Val Ala Arg Leu Ala Leu Lys Arg Leu							
152			460		465		470	
154	att gat gtc agt atg gga gtt ata gca cct tta tca gag caa cta aca	1614						
155	Ile Asp Val Ser Met Gly Val Ile Ala Pro Leu Ser Glu Gln Leu Thr							
156			475		480		485	
158	aag cca ttg ccc aat gcc atg gtt ctt gtc aac ctc aag gaa cta tct	1662						
159	Lys Pro Leu Pro Asn Ala Met Val Leu Val Asn Leu Lys Glu Leu Ser							
160			490		495		500	
162	ggt ggc gct tac aag ctt ctc cct gaa ggt aca cgc ttg gtt gtc tct	1710						
163	Gly Gly Ala Tyr Lys Leu Leu Pro Glu Gly Thr Arg Leu Val Val Ser							
164			505		510		515	
166	cta cga ggc gat gag cct tac gag gag ctt gaa ata ctc aaa aac att	1758						
167	Leu Arg Gly Asp Glu Pro Tyr Glu Glu Leu Glu Ile Leu Lys Asn Ile							
168	520		525		530		535	
170	gat gct act atg att ctc cat gat gta cct ttc act gaa gac aaa gtt	1806						
171	Asp Ala Thr Met Ile Leu His Asp Val Pro Phe Thr Glu Asp Lys Val							
172			540		545		550	
174	agc aga gta cat gca gct cgg agg cta ttc gag ttc tta tcc gag aat	1854						
175	Ser Arg Val His Ala Ala Arg Arg Leu Phe Glu Phe Leu Ser Glu Asn							
176			555		560		565	
178	tca gtt aac ttt cct gtt att cat cac ata aac ttc cca acc gga atc	1902						
179	Ser Val Asn Phe Pro Val Ile His His Ile Asn Phe Pro Thr Gly Ile							
180			570		575		580	
182	cac aga gac gaa ttg gtg att cat gca ggg aca tat gct gga ggc ctt	1950						
183	His Arg Asp Glu Leu Val Ile His Ala Gly Thr Tyr Ala Gly Gly Leu							
184			585		590		595	
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187	Leu Val Asp Gly Leu Gly Asp Gly Val Met Leu Glu Ala Pro Asp Gln							
188	600		605		610		615	
190	gat ttt gat ttt ctt agg aat act tcc ttc aac tta tta caa gga tgc	2046						
191	Asp Phe Asp Phe Leu Arg Asn Thr Ser Phe Asn Leu Leu Gln Gly Cys							
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199 Arg Thr Leu Phe Asp Leu Gln Glu Ile Ser Ala Glu Ile Arg Glu Lys
200          650          655          660
202 act tcc cat tta cct ggc gtt tcg atc gca atc atg gga tgc att gtg      2190
203 Thr Ser His Leu Pro Gly Val Ser Ile Ala Ile Met Gly Cys Ile Val
204          665          670          675
206 aat gga cca gga gaa atg gca gat gct gat ttc gga tat gta ggt ggt      2238
207 Asn Gly Pro Gly Glu Met Ala Asp Ala Asp Phe Gly Tyr Val Gly Gly
208 680          685          690          695
210 tct ccc gga aaa atc gac ctt tat gtc gga aag acg gtg gtg aag cgt      2286
211 Ser Pro Gly Lys Ile Asp Leu Tyr Val Gly Lys Thr Val Val Lys Arg
212          700          705          710
214 ggg ata gct atg acg gag gca aca gat gct ctg atc ggt ctg atc aaa      2334
215 Gly Ile Ala Met Thr Glu Ala Thr Asp Ala Leu Ile Gly Leu Ile Lys
216          715          720          725
218 gaa cat ggt cgt tgg gtc gac ccg ccc gtg gct gat gag tag      2376
219 Glu His Gly Arg Trp Val Asp Pro Pro Val Ala Asp Glu
220          730          735          740
222 atttcaaaac ggagaaagat ggggtgggcca ttctttgaaa actgtgagag aagatatata      2436
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253 tcgcgtaggt ttccctacgg aagagctgag ttctgtaacg aaaaaaaccc gccacgtttc      180
255 gcatcgagcc tactttaatt agcgtgggaa aataattcaa agtagcgacc tgtaccctgt      240
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271	tggaatgat	cgatcgatgt	gcagctagag	atcttggcct	ccctctgctc	aaccctgacc	720
273	tcgacgaggg	cgcggaacttc	gcccacggcg	tcaacttcgc	cgtcgcccgc	gccaccgcgc	780
275	tcaacacgac	ggcgctcgcc	gccaggcgga	tcaccgtccc	ccacaccaac	agccccctcg	840
277	acgtgcagct	cagatttttt	ttgttttaga	gaagggtatt	ttttaccggt	cctctacatc	900
279	caaccggata	tatacggcta	ttgaagtagg	gaacttaacc	ctgtaaacia	tccatccata	960
281	gaggatatga	acctaagacc	ttgaggtact	acttcaaccg	gatataatcg	tgcagctcag	1020
283	atggttcaag	gaattcatga	actccacaac	tagttctcct	caagggtgaac	gaacaaactg	1080
285	aaacgcattt	cagcttaatt	tcgaccggtg	cctgatcagt	gccagtcagc	aatgctgtat	1140
287	ctcacaata	attaagctaa	tgtacagctt	ttcagtgcga	gaatgacttt	catatagaga	1200
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303	gcaacctccc	gctgggttgc	gtgccgagct	acatgagcgc	ggtgaacgcg	acggaccggg	1680
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349	aaaattgaat	attatcgaat	acagatacgg	agcgaatata	agatggaacg	aatacagtag	3060
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363	tctacaactt	tgatatggaa	cacatctcca	tcagatgtcg	tttgaattgt	agatctgaga	3480

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY

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Input Set : A:\16516-107 seq listing.txt

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L:14 M:270 C: Current Application Number differs, Replaced Current Application No
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:821 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:1759 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:1763 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:1765 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:1767 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:1769 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:1798 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:1881 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:1883 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
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